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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,559	11/30/2001	Zhaoyun Xing	004-6815	5904

42714 7590 04/24/2006

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EXAMINER

ROSSOSHEK, YELENA

ART UNIT PAPER NUMBER

2825

DATE MAILED: 04/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

HA

**Office Action Summary**

Application No.

09/998,559

Applicant(s)

XING ET AL.

Examiner

Helen Rossoshek

Art Unit

2825

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 22-30 is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date _____</p> | <p>4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. <u>04182006</u>.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
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### DETAILED ACTION

1. This Supplemental office action is in response to the Application 09/998,559 filed 11/30/2001 and Telephone interview with Applicants' representative Nicole Cave (Registration No. 54,021) on 04/18/2006. See PTO-413. Applicants' time period for reply has been adjusted in accordance with MPEP 71.06.

2. Claims 1-30 remain pending in the Application.

3. Applicant representative's arguments have been fully considered, but they are partly not persuasive.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 10 provides for the use of finding the low cost path from a source location to a target location, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

6. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: there is no relationship between steps in the limitations of the **independent** claim 10 and the preamble of the claim stating "a method for finding a low cost path from a source . . .".

Essential step of "finding a low cost path" is missing, such as "backtracking from the target location to the source location using the recorded cost functions for each boundary segment". Moreover, the steps of the limitations of the claim 10 addressed to finding and storing a data of **"the cost for each boundary segment for use in finding the low cost path"**, while the preamble states the method **"for finding a low cost path"**. Therefore, essential step, showing how the low cost path is found, is missing, unless, this step is found in the claim 11, which is "backtracking from the target location to the source . . ."

All dependent claims 11-21 are virtually rejected, based on the rejected above claim.

***Allowable Subject Matter***

7. Claims 1-9 and 22-30 are allowed. The following is an examiner's statement of reasons for allowance: the prior art of record does not teach backtracking from the target location to the source location using recorded cost functions for boundary segments after searching performing a method for finding a low cost path from a source location to the target location including searching for a path by propagating the cost function from at least one boundary segment in the traversable region to at least one other boundary segment.

8. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach

backtracking from the target location to the source location using recorded cost functions for each boundary segment.

### **Remarks**

9. With respect to the Applicant's argument in regarding to the rejection of the claim 10 under 35 USC § 112 Examiner provides a rationale for considering the omitted essential step. As it was mentioned above, the last limitation of the claim 10 stating, "recording the cost for each boundary segment **for use . . .**" reverts to the preamble of the claim stating "a method for finding the low cost path from a source location to a target location . . .", therefore, the claim is indefinite where it merely recites a use without any active, positive steps delimiting **how this use is actually practiced**.

### **Conclusion**

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

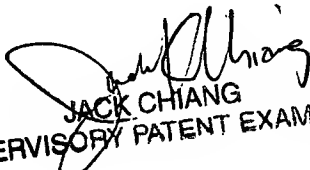
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Rossoshek whose telephone number is 571-272-1905. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner  
Helen Rossoshek  
AU 2825

  
JACK CHIANG  
SUPERVISORY PATENT EXAMINER